

## What is Claimed:

- 1                   1.       A method for hand-off of mobile devices between a plurality of  
2       access points comprising the steps of:  
3                   receiving, at a first mobile device, connection information for establishing  
4       a wireless connection between the mobile device and one of the plurality of access  
5       points;  
6                   storing the received connection information;  
7                   transmitting the stored connection information from the first mobile  
8       device to one or more other mobile devices to assist the one or more other mobile  
9       devices in making a connection to the access point.
- 1                   2.       A method according to claim 1, wherein the connection  
2       information is data link level connection information and the step of transmitting the  
3       stored information includes the step of periodically transmitting the connection  
4       information through a channel used by the first mobile device to communicate with a  
5       current access point.
- 6                   3.       A method according to claim 1, wherein the connection  
7       information is data link level connection information and the step of transmitting the  
8       stored information includes the step of periodically transmitting the connection  
9       information through a channel used by the first mobile device to communicate with a  
10      prior access point.
- 11                  4.       A method according to claim 1, further including the steps of:  
12                  establishing the wireless connection between the mobile device and the  
13      access point;  
14                  monitoring relative distance between the mobile device and the access  
15      point; and  
16                  establishing a new wireless connection between the mobile device and  
17      another one of the plurality of access points when the monitored distance between the  
18      mobile device and the access point becomes greater than a predetermined threshold  
19      value.
- 1                   5.       A method according to claim 1, further including the steps of:  
2                   establishing the wireless connection between the mobile device and the  
3      access point;

4 monitoring signal strength between the mobile device and the access  
5 point; and

6 establishing a new wireless connection between the mobile device and  
7 another one of the plurality of access points when signal strength becomes less than a  
8 predetermined threshold value.

1 6. A method according to claim 5, wherein the step of storing the  
2 information includes the steps of assigning a priority level to the information and  
3 storing the information to a list organized according to the priority level.

4 7. A method according to claim 5, wherein the step of establishing  
5 the new wireless connection includes the steps of retrieving the connection information  
6 having a highest priority level in the list and attempting to establish the new wireless  
7 connection according to the connection information having the highest priority level.

8 8. A method according to claim 1, wherein the step of transmitting  
9 the information includes the step of adjusting transmission power to increase or  
10 decrease coverage range according to predetermined criteria.

11 9. A method according to claim 1, wherein the connection  
12 information is network level connection information and the step of transmitting the  
13 connection information includes the steps of:

14 detecting when one or more mobile devices establish a data link level  
15 connection to the access point; and

16 transmitting the network level connection information to the one or more  
17 mobile devices.

18 10. A method for hand-off of mobile devices between a plurality of  
19 access points comprising the steps of:

20 receiving, at a first mobile device connected to a current access point,  
21 connection information for establishing a wireless connection between the mobile  
22 device and one or more of the plurality of access points;

23 storing the received connection information;

24 transmitting stored connection information to establish a wireless  
25 connection between the mobile device and one of the current access point and a prior  
26 access point from the first mobile device to one or more other mobile devices to assist  
27 the one or more other mobile devices in making a connection to the current or prior  
28 access points.

29           11. A method according to claim 10, wherein the step of transmitting  
30 stored connection information includes transmitting stored connection information for  
31 establishing a wireless connection to the prior access point through a channel used to  
32 communicate to the current access point.

33           12. A method according to claim 10, wherein the step of transmitting  
34 stored connection information includes transmitting stored connection information for  
35 establishing a wireless connection to the current access point through a channel used to  
36 communicate to the prior access point.

37           13. A method according to claim 10, wherein the step of storing  
38 received information the step of assigning a priority level to the information and storing  
39 the information to a list organized according to the priority level, the method further  
40 comprising the steps of:

41                 monitoring signal strength between the first mobile device and the  
42 current access point; and

43                 establishing a new wireless connection between the first mobile device  
44 and another one of the plurality of access points according to the received information  
45 having a highest priority level, when signal strength goes below a predetermined  
46 threshold value.

1           14. A method according to claim 10, wherein the step of storing  
2 received information the step of assigning a priority level to the information based on  
3 distance between the mobile device and each of the access points and storing the  
4 information to a list organized according to the priority level, the method further  
5 comprising the steps of:

6                 monitoring relative distance between the first mobile device and each of  
7 the stored access points based on position information included with the stored access  
8 point information to maintain the priority list; and

9                 establishing a new wireless connection between the first mobile device  
10 and another one of the plurality of access points according to the received information  
11 having a highest priority level, when signal strength goes below a predetermined  
12 threshold value.

1           15. A method according to claim 10, wherein the step of transmitting  
2 the information includes the step of adjusting transmission power to increase or  
3 decrease coverage range according to predetermined criteria.

4                   16.    A method for hand-off of mobile devices between a plurality of  
5 access points comprising the steps of:

6                   receiving, at a first mobile device, network level connection information  
7 for establishing a level 3 connection between the mobile device and a current one of  
8 the plurality of access points;

9                   storing the received network level connection information;

10                  detecting when one or more mobile devices establish a data link level  
11 connection to the access point; and

12                  transmitting the network level connection information from the first  
13 mobile device to one or more other mobile devices to assist the one or more other  
14 mobile devices in making a network level connection to the access point.